NEWSLINE

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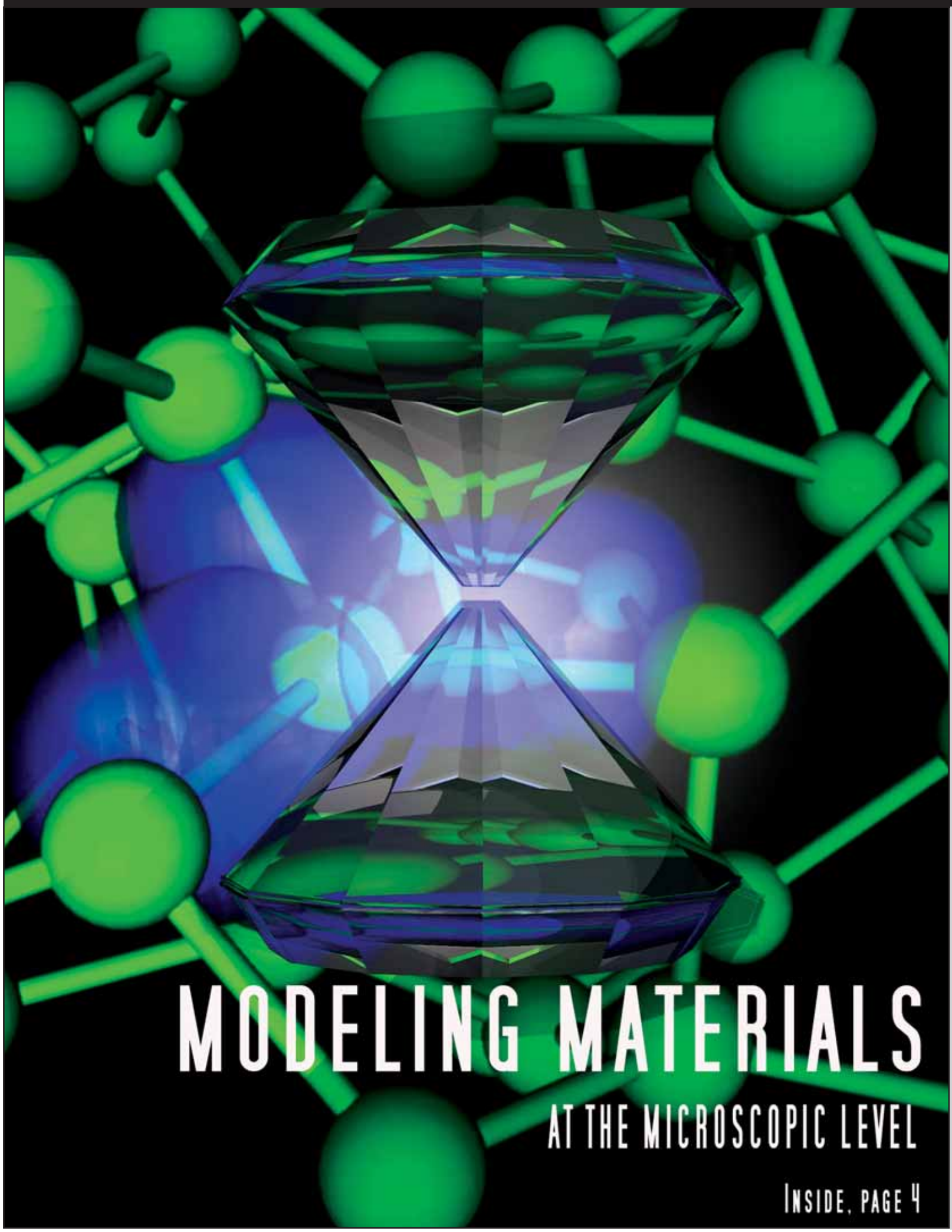


MODELING MATERIALS

AT THE MICROSCOPIC LEVEL

Inside, page 4

WHAT'S **INSIDE**

VIP VISITS

Brooks sees weapons program transformation

In an all-hands meeting at the Lab Thursday, National Nuclear Security Administration Administrator Linton Brooks discussed the future of the weapons program, Livermore contract competition and provided his view of the long-term future for national security programs.

Acknowledging the "uncertainty" of the times, Brooks sought to reassure employees about the future of the Laboratory in "preemptive" opening remarks before fielding questions from the audience in the Bldg. 123 auditorium.

Addressing NNSA's core mission, Brooks said the nuclear weapons programs may be "on the verge of a transformation" with a new vision for the nation's nuclear deterrent.

The Reliable Replacement Warhead (RRW) effort will take the nuclear weapons program in a new direction, much as science-based stockpile stewardship transformed the nuclear weapons complex 10 years ago, he said.

"RRW offers an enormously compelling vision that now has to be turned into reality," Brooks said, noting that many people were skeptical that stockpile stewardship could achieve its ambitious goals.

"Today everybody recognizes that stockpile stewardship is the only way to think about nuclear weapons. SSP was clearly the right thing to do."

Brooks described the RRW vision as a world with a much smaller nuclear stockpile requiring less cumbersome routine maintenance procedures and a better integrated weapons complex.

JACQUELINE MCBRIDE/NEWSLINE

Linton Brooks

The capabilities developed by SSP, such as advanced simulation, have laid the foundation for developing the RRW, according to Brooks. "We can take a sophisticated design and develop it without testing. That wouldn't have been possible 10 years ago."

Contract competition

Turning to the "distracting turbulence" of contract competition, Brooks reminded employees that "DOE/NNSA is under legal obligation to complete the competition for the Livermore contract by September of next year."

In developing the request for proposal (RFP) for Livermore, Brooks said NNSA would build on its experience with the Los Alamos RFP and that the Livermore RFP likely would be very similar. "Differences will be clear to procurement specialists, but not to others.

"There's evidence that competition leads to long-term improvements," he said, though he acknowledged the difficulty of coping with "short-term emotion."

"It doesn't have to be as bad as you fear it to be," Brooks said. "Our intent is to run the competition in a way that preserves what is great about the labs' science and commitment to national security."

Labs' long term future

The success of stockpile stewardship and the capabilities that make RRW possible demonstrate that "the need for two physics labs is just unshakable."

While the balance of missions "and what you'll be doing" is likely to change as new national security threats emerge over time, "the fundamental nature of the weapons labs will remain the same."

"The importance of intellectual discourse and academic freedom to the success of the labs — I don't think that will change," Brooks said in concluding his opening remarks. "This is a very exciting time for the weapons program."

Q&A'S, MORE — PAGE 8

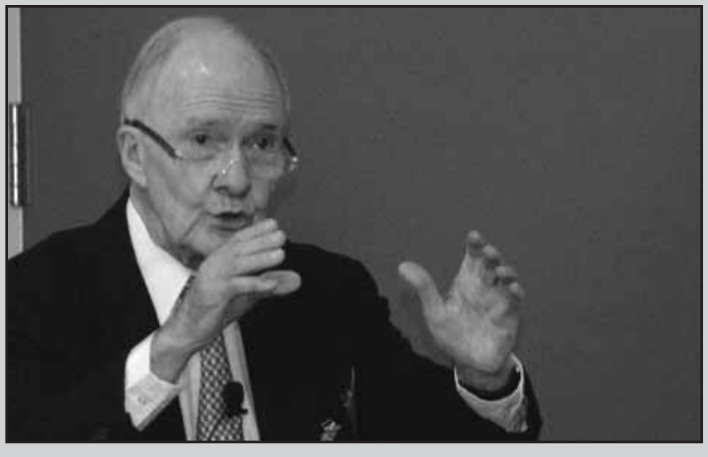
Scowcroft leads discussion of WMD

Brent Scowcroft (at right), chaired a VIP roundtable discussion, "Unclear and Present Danger: Understanding and Responding to WMD Latency and Related Destructive Potential Emerging in Contemporary Societies" presented recently by the Lab's Center for Global Security Research (CGSR).

Scowcroft was the National Security Adviser under presidents Gerald Ford and George H. W. Bush and a lieutenant general in the US Air Force. He also served as military assistant to President Richard Nixon and as deputy assistant to the president for National Security Affairs in the Nixon and Ford administrations. He also served as chairman of the President's Foreign Intelligence Advisory Board under President George W. Bush from 2001 to 2005.

In the course of his military career, Scowcroft held positions in the Organization of the Joint Chiefs of Staff, Headquarters of the U.S. Air Force and the Office of the Assistant Secretary of Defense for International Security Affairs. Other assignments included faculty positions at the U. S. Air Force Academy and the US Military Academy at West Point, and assistant air attache in the American Embassy in Belgrade, Yugoslavia. Scowcroft retired with the rank of lieutenant general in the U.S. Air Force.

Scowcroft has chaired or served on a number of policy advisory councils, including the President's General Advisory Committee on Arms Control, the President's Commission on Strategic Forces, the President's Blue Ribbon Commission on Defense Management, the Defense Policy Board and the President's Special Review Board (Tower Commission) investigating the Iran-Contra affair. Scowcroft was a leading Republican critic of U.S. policy towards Iraq before and after the 2003 invasion of Iraq. Scowcroft supported the invasion of Afghanistan as a "direct response" to terrorism.



BOB HIRSCHFELD/NEWSLINE

IN PROFILE

Laser scientist Patterson pulses to his own beat

By Bob Hirschfeld
Newsline staff writer

All it takes is a quick glance at his Jeep's license plate "DRMMER" to know that Ralph Patterson's passion is percussion.

Patterson's daytime position is project manager of the National Ignition Facility. But much of his free time is spent drumming.

Over the years, he's drummed in rock bands, marching bands, symphonies, church choirs, and is currently a member of the LLESA Big Band, and the LaSalle Street Jazz Band in Walnut Creek. As if that wasn't enough, every morning before work he heads to Granada High School where he's a volunteer percussion instructor. "It's an important outlet for me," he says.

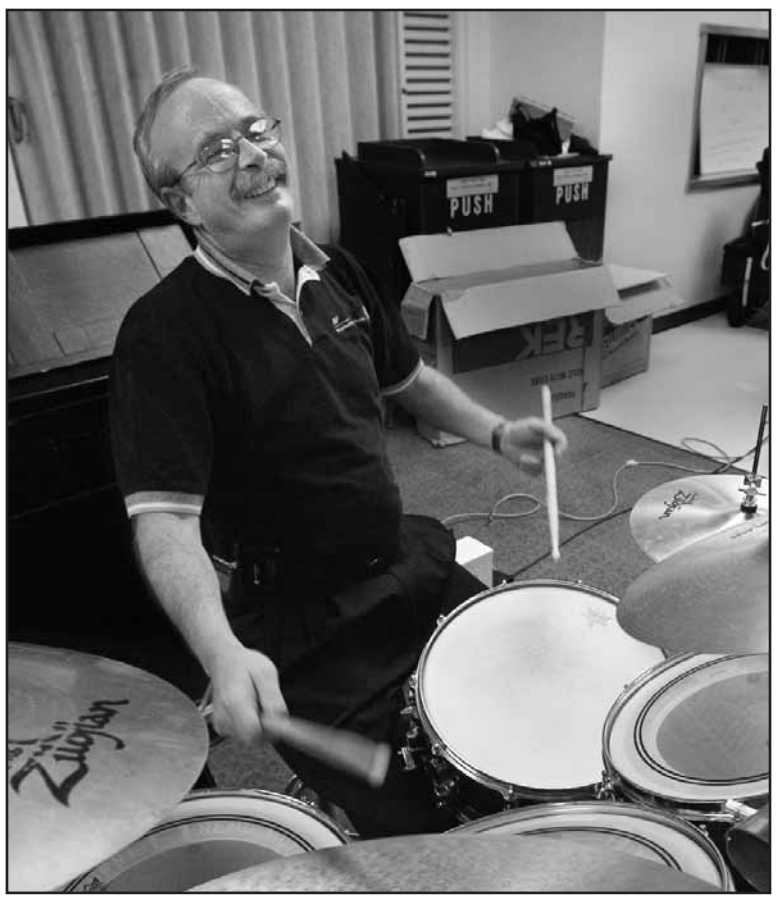
Patterson hails from Joliet, Illinois. Upon graduating with a bachelor's degree in nuclear engineering from Purdue University, he earned his MS in systems management from the Florida Institute of Technology.

After running the Army's laser target designator program while a member of the Corps of Engineers at Alabama's Redstone Arsenal, Patterson arrived at LLNL in 1982 on a one-year temporary assignment for Martin Marietta. It lasted eight years.

He served as director of Atomic Vapor Laser Isotope Separation Programs (AVLIS) for Martin Marietta, as well as associate program leader for Laser Technology in the LLNL Laser Isotope Separation Program.

He returned to LLNL in 1993 after a brief stint as a technology consultant to serve as deputy associate director for Physics. His duties included shepherding the PEREGRINE program, developed to analyze and plan radiation treatment for cancer patients.

His position at NIF began in the summer of 2000, when Ed Moses (a colleague from AVLIS and PEREGRINE) asked Patterson to become deputy project manager. When Moses was elevated to associate director, Patterson was named acting project manager, a position that became permanent in December.



JACQUELINE MCBRIDE/NEWSLINE

Ralph Patterson

The drumming began much earlier.

Patterson says he was only a second grader when he discovered the pleasures of pounding pencils on his classroom desk. Although the school band required students to be at least in the fourth grade, Patterson recalls his teacher complaining to the band director, "You've got to take this kid; he's driving me nuts."

And now, Patterson's three sons have taken up the drums. The oldest — aged 20 — started playing violin, then switched to clarinet for a few years, and now drums in two bands. The middle son, 16 years old, "is a tremendous piano player," according to his proud father, but he is also drumming in his high school band, a jazz band, and a percussion ensemble. And the youngest son, now 12, told his family he preferred guitar (he plays bass), but when he got to his school's band, he also took up the drums.

When he's not drumming, Patterson and his wife Sarita (technical chief of staff of the NAI Directorate) take to the water on a 45-foot sailboat. She's crossed the ocean several times, and is an avid sailor. He prefers staying closer to the coast, sailing in San Francisco Bay, or heading down to Santa Cruz.

"If you can sail in the Bay," he says, "you can sail almost anywhere in the world."

But much of his life revolves around LLNL.

"NIF represents the culmination of many of my life's goals. I became a nuclear engineer because I wanted to contribute to finding a long-term energy strategy, and NIF is a step toward the hydrogen economy. I served in the armed forces because I believe in a strong defense, and NIF is an important element of stockpile stewardship. I've been involved with lasers my entire career, and they don't get any better than NIF."

Patterson describes NIF as "a true grand challenge, not only building and operating the world's most powerful laser, but bringing together all of the other elements required to achieve ignition."

And most importantly, he says, "It's the people. I'm surrounded with the most dedicated, hardworking, talented, powerful group of people, not only here at the Lab but with our partners around the world. That's why NIF is coming to be, and why I am proud to serve."

A fond farewell

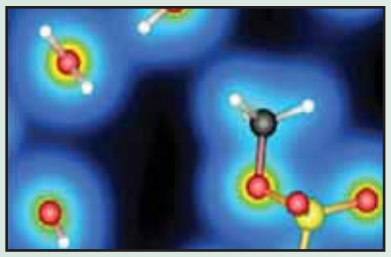
Wayne Shotts, deputy director for Operations, was honored at a retirement reception in the Central Café Thursday afternoon. Shotts is retiring after a 31-year Laboratory career. Among those paying tribute to Shotts was NNSA Administrator Linton Brooks. During an all-hands meeting earlier in the day, Brooks called Shotts "a national treasure."

Shotts and his wife, Jacquelyn, plan to embark on an around-the-world trip. Look for a profile and retrospective on Shotts' career in the next edition of *Newsline,* Friday, Feb. 17.

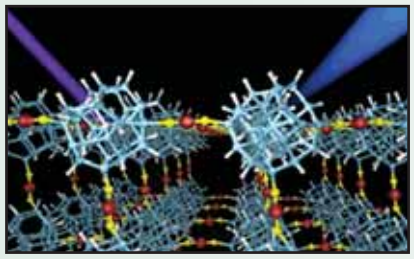
JACQUELINE MCBRIDE/NEWSLINE

SCIENCE NEWS

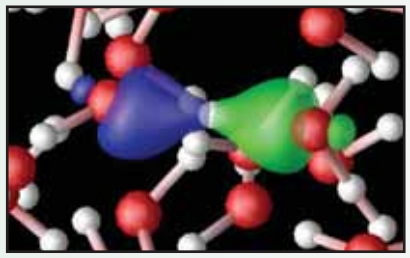
A quantum leap in materials modeling



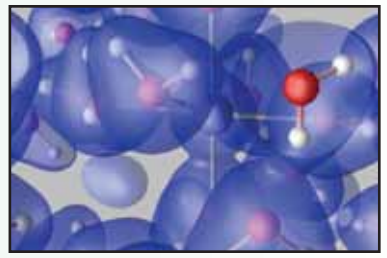
Biomolecules



Silicon dots array



High-pressure fluids



Ions in water

By Anne M. Stark
Newsline staff writer

When Eric Schwegler joined the Laboratory in 1998, he was part of a two-person team working on computer simulations in the Physics and Advanced Technologies Directorate's H Division.

"We were using quantum simulations to look at many different materials, but our main focus was on computational biology, in particular we were looking at problems involving water," he said.

That duo has grown into the 11-person Quantum Simulations Group (QSG) that conducts theoretical computer simulations of matter under extreme temperatures and pressures, water and other aqueous solutions, and nanoscale materials.

"The methods that we use take the fundamental laws of quantum mechanics into consideration," said Schwegler, who serves as acting group leader. "The modeling doesn't involve input parameters from experiments. By solving the right equations, we can make predictions with the confidence that our results are very close to reality."

But that doesn't mean that QSG scientists ignore their experimentalist colleagues. In fact, they have a symbiotic relationship with them.

For example, if an experimentalist is trying to find out how hydrogen responds under extreme pressures and temperatures, that person often reaches a ceiling in the laboratory in which temperature and pressure can only go so high or measurements become exceedingly difficult to interpret.

But that's where QSG comes into play. Quantum simulations predict the behavior of molecules and condensed matter from the fundamental interactions of electrons and ions. Using supercomputers, scientists can predict the behavior of these systems at extreme temperatures (more than 5,000 Kelvin) and pressures (more than 2 million atmospheres) with an atomistic level of detail.

Simply put, QSG conducts computer simulations of ordinary materials, such as water, and determine how they behave in different environments. The end goal is to validate, understand and predict properties of materials that are important to the national security missions of the Laboratory.

The scientists in the group apply *ab initio* (or first principles) molecular dynamic and quantum Monte Carlo techniques to study the behavior of materials. The group works closely with the Computation Directorate.

To date, the group has had stunning results.

Most recently, a team made up of Alfredo Correa, Stanimir Bonev (who is now an assistant professor at Dalhousie University in Canada) and Giulia Galli (who is now a UC Davis professor) shed some light on the phase diagram of carbon at high pressure and temperature. The research appears in the Jan. 31 edition of the *Proceedings of the National Academy of Sciences.*

In particular, the authors determined the solid/liquid and solid/solid phase boundaries of carbon for pressures up to 20 million atmospheres and more than 10,000 degrees Kelvin. The simulations provide results on the physical properties of carbon, which are of great importance for devising models of Neptune, Uranus and white dwarf stars, as well as of extrasolar carbon-rich planets.

In its elemental form, carbon is found in coal, graphite, diamond, bucky balls and nanotubes. These are materials with very different properties, yet at the microscopic level they only differ by the geometrical arrangements of carbon atoms.

> ***"We are using quantum simulations to unravel how the properties of a material changes at the nanoscale."***
>
> *– Eric Schwegler*

In spite of many investigations over centuries, and of important experimental work of the last decades aimed at studying compressed diamond, the phase boundaries and melting properties of elemental carbon are poorly known, and its electronic properties are not well understood under extreme conditions. Experimental data are scarce because of difficulties in reaching megabar (1 million atmospheres) pressures and thousands of Kelvin regimes in the laboratory.

"Our results show a consistent description of elemental carbon in a broad range of temperature and pressures and a description of its electronic properties within the same framework," said Correa, a Student Employee Graduate Research Fellowship (SEGRF) student from UC Berkeley who works in the Quantum Simulations Group. "Our simulation results call for a partial revision of current planetary models, especially for the description of their core regions. Our computational work also may help us interpret future experimental work."

In 2004, the group computed the melting curve of hydrogen at high pressure, leading to the prediction of a low-temperature quantum fluid — a brand new state of matter.

The measurement of the high-pressure phases of hydrogen has been the focus of numerous experiments for nearly a century.

However, the phase boundary that separates the solid and the liquid had remained relatively unknown.

Bonev, Schwegler, Tadashi Ogitsu and Galli reported in the journal *Nature* the melting line with first principles simulations, and proposed new experimental measurements to verify the existence of a maximum melting temperature and the transformation of solid molecular hydrogen to a metallic liquid at pressures close to 4 million atmospheres.

In the nano field, QSG researchers are moving into new turf.

"This is an entirely new set of materials that people don't know all that much about," Schwegler said. "We are using quantum simulations to unravel how the properties of a material changes at the nanoscale."

Schwegler said QSG's future is bright. "As we continuously improve our methods and the Lab acquires new supercomputers, we can look at other systems that no one else can look at."

SCIENCE NEWS

Discovery of planet unearths new horizons

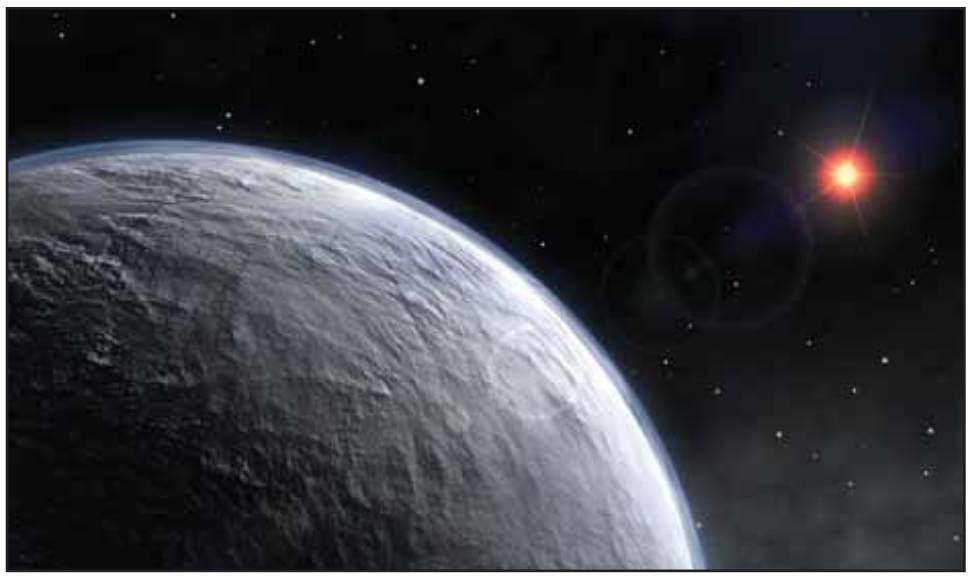
By Anne M. Stark
Newsline staff writer

An international team of astrophysicists has discovered a new planet five times the mass of Earth, the smallest extrasolar planet unearthed to date outside of our solar system.

Using a network of telescopes scattered across the globe, the group discovered the extrasolar planet is more Earth-like than any other planet found so far. It circles its parent star every 10 years. The discovery opens a new chapter in the search for planets that support life.

"That fact that we stumbled on one means there are thousands of them out there," said Kem Cook, an astronomer in the Laboratory's Institute for Geophysics and Planetary Physics who is also a member of PLANET, Probing Lensing Anomalies NETwork, a part of the group that made the discovery. "It's got a solid core. Its mass is low enough that it couldn't hold itself together if it were just gas."

The new planet and its red dwarf parent star lies in the constellation Sagittarius, not far from the central bulge of our galaxy.



EUROPEAN SOUTHERN OBSERVATORY

European Southern Observatory artist's rendition of the newly discovered extrasolar planet.

To date, almost 200 planets within the Milky Way have been found. However, the majority of them are gas giants, close to the size of Jupiter or Saturn that orbit their parent star at distances much less than the distance from Earth to the sun. The new planet, made of rock and ice, orbits at three times the distance from Earth to the sun.

The team used a technique called microlensing, an idea that Albert Einstein came up with in 1936. By observing a particular star (A) on the sky, imagine another star (B) in the line of sight toward A. When A, B and the observer are exactly aligned, a ring-like image will be formed. Star B acts as a gravitational lens by bending the light of star A toward the observer. From there, objects, such as planets or white dwarfs, around A temporarily brighten star B.

In this case, star A caused a characteristic brightening in star B that lasted about a month. Any planets orbiting star A can produce an additional signal, lasting days for giant planets down to hours for Earth-mass planets. The planet is not directly 'seen,' or even the star that it's orbiting, but its presence can be deduced from the effect of its gravity. In the case of the newly found planet, the extra brightening lasted about 12 hours.

"There's a deviation of light when a planet is in the way," Cook said. "In this instance, there was a half-day brightening that was indicative of a planet. There must be lots of these out there. The microlensing technique is not going to find nearby planets. We're not going to discover planets to which NASA can fly. Microlensing can tell us how common planets are in distant parts of the galaxy and probe details of planetary formation that other techniques cannot."

The discovery is the joint effort of three independent microlensing campaigns: PLANET/RoboNet, OGLE (Optical Gravitational Lensing Experiment), and MOA (Microlensing Observations in Astrophysics), involving a total of 73 collaborators affiliated with 32 institutions in 12 countries — France, the United Kingdom, Poland, Denmark, Germany, Austria, Chile, Australia, New Zealand, United States, South Africa and Japan. The research appears in the Jan. 26 edition of the journal *Nature*.

Gravitational microlensing began in early 1990s with the formation of the MACHO (massive compact halo objects) team to identify dark matter that makes up more than 90 percent of the Milky Way.

Cook played an instrumental role in the MACHO project. The team looked extensively at the Large Magellenic Cloud (LMC) and the galactic bulge looking for MACHOs at the Mt. Stromlo Observatory in Australia. The group flourished finding hundreds of MACHOs in the galactic bulge. MACHO ended in 2000 because "we had learned about as much as we could about galactic dark matter using that system," Cook said.

However, the end of MACHO did not mean the end of the search for dark matter. MACHO has evolved into the SuperMACHO project with astronomers using a bigger telescope (the National Science Foundation's Blanco 4-meter telescope at Cerro Tololo Inter-American Observatory (CTIO) in Chile).

The SuperMACHO team is monitorimg tens of millions of stars in the Large Magellanic Cloud (LMC), a neighboring galaxy, to search for the distinctive brightening of stars that is the signature of gravitational microlensing. The goal is to ascertain the nature of the mysterious population of objects that is responsible for producing the observed excess of microlensing events in the LMC.

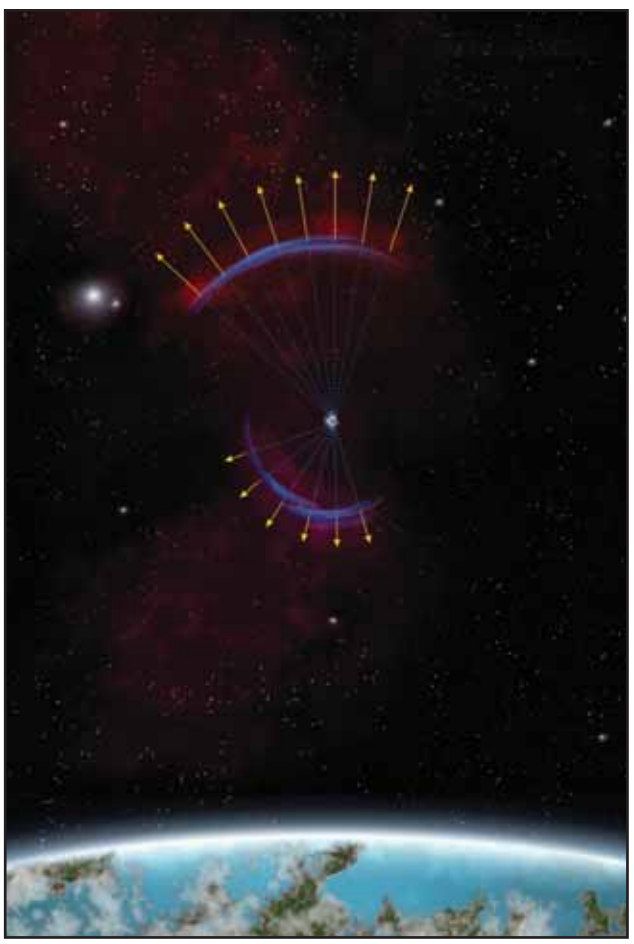
In addition to Cook, LLNL scientists Mark Huber and Sergei Nikolaev also are part of the SuperMACHO team.

The SuperMACHO team recently found faint visible echoes of three ancient supernovae by detecting their centuries-old light as it is reflected by clouds of interstellar dust hundreds of light-years removed from the original explosions.

Located in a nearby galaxy in the southern skies of Earth, the three exploding stars flashed into short-lived brilliance at least two centuries ago, and probably longer. The oldest one is likely to have occurred more than 600 years ago.

Just as a sound echo can occur when sound waves bounce off a distant surface and reflect back toward the listener, a light echo can be seen when light waves traveling through space are reflected toward the viewer.

The light echoes were discovered by comparing images of the LMC taken years apart. By precisely subtracting the common elements in each image of the galaxy and analyzing what variable objects remain, the team looks for evidence of invisible dark matter that might distort the light of stars in a transitory way. The research appeared in the Dec. 22, 2005 edition of *Nature*.



P. MARENFELD AND NAOA/AURA/NSF

A team of astronomers recently found faint visible echoes of three ancient supernovae in the Large Magellanic Cloud.

LABORATORY NEWS

Tri-Valley Science and Engineering Fair coming soon

The annual Tri-Valley Science and Engineering Fair will mark its 10th anniversary with a special "homecoming," starting March 28 and continuing through April 1.

For the first time in its history, the fair, sponsored by the Laboratory, will be held in its hometown, at Robert Livermore Community Center in Livermore.

As in previous years, students will participate from public, private and parochial schools in the Dublin, Livermore, Pleasanton, San Ramon and Sunol school districts.

Typically, the fair had been held in the San Ramon and Danville areas. But organizers have long desired to bring the event closer to the Lab, the major sponsor behind the event.

"We are very excited about the science fair coming to Livermore," said Nadine Horner, Tri-Valley Science and Engineering Fair (TVSEF) director. "The fair has never been held in a location like the newly built Robert Livermore Community Center. Here, we will be able to simultaneously showcase more than 200 student projects in one large hall — a feature that's been lacking over the years."

At the Robert Livermore Community Center, fair organizers will present an impressive panorama of projects displayed in one large venue. Horner believes that the sea of science projects — with topics ranging from biology to zoology — and the activity generated will only heighten the overall excitement evident at competitions of this size.

The science fair was established to encourage middle and high school students to learn science by doing science. During the fair, students present their work to scientists and receive feedback about their projects. Their outstanding efforts will be awarded with scholarships, cash prizes and a sense of personal achievement.

"Science fairs are all about the scientific method," explained Cherry Murray, the Lab's deputy director for Science & Technology. "Students must take something they do not know but are curious about, and then devise a method to unravel a mystery. What could be more exciting than solving a mystery?"

As an organizing sponsor, the Lab and its employees have supported the fair since its inception, demonstrating a strong commitment to science education and the community.

"It is important that Lab volunteers participate and show students that science is fun," Murray added.

The Engineering Directorate has been a strong supporter of the TVSEF right from the start.

"Over the years, hundreds of our researchers have donated their time and expertise as judges and volunteers to encourage the interests of budding young scientists and engineers. Last year, more than 140 judges came from LLNL," Engineering deputy associate director for Operations Monya Lane said. "Behind the scenes, Engineering has also provided administrative participants, and the TVSEF poster and program."

"The excitement and enthusiasm of the kids is infectious, and their projects are quite impressive," Lane adds.

The TVSEF is affiliated with the Intel International Science and Engineering Fair (Intel ISEF), the world's largest pre-college celebration of science. Winners of the TVSEF go on to compete at the Intel ISEF held annually in May. The Intel ISEF brings together more than 1,400 students from more than 40 nations to compete for scholarships, tuition grants, internships, scientific field trips, and the grand prize: a $50,000 college scholarship.

Murray believes that the Intel affiliation demonstrates that LLNL promotes the best in science.

In addition to a new location, there are a few other changes in store for the science fair. Lab scientists and engineers will be invited to chat informally with student participants about their findings. Also, the Laboratory plans to host a reception for community leaders who just might be interested in seeing what future scientists from their cities are doing. This year, the reception will be held in lieu of the Lab's annual Community Leader Day.

Local sixth graders also will get a chance to preview the work of upperclassmen.

"We want the sixth graders to see what the older students are accomplishing. We hope to spark their interest so that they will want to get involved in future science fair competitions," Horner said.

The sixth-grader visits will be topped off with a special "Fun with Science" demonstration, where a Lab scientist will lead hands-on experiments about subjects such as air pressure, chemical reactions and density.

More than 200 students are expected to participate in the fair with such interesting project titles as "My Big Fat Zit," "Do You Really Want to Drink That?" and "How to Reduce the Effect of a Tsunami."

The fair will be open to the public on Thursday, March 30, 10 a.m.-4 p.m., Friday, March 31, 10 a.m. - 7 p.m. and Saturday, April 1, 10 a.m.-noon.

For more information about the TVSEF, go to the Web at http://tvsef.llnl.gov/ or contact Nadine Horner, 3-9051 or horner7@llnl.gov.

LAWRENCE LIVERMORE NATIONAL LABORATORY

Tri-Valley Science and Engineering Fair

10th Anniversary

Volunteers needed: March 28–April 1

Robert Livermore Community Center, 4444 East Ave., Livermore

Join the Scientific Review Committee: Be part of an established group of scientists that evaluate project applications before competition. The time commitment will be Friday, Feb. 10 from 9 a.m.-3 p.m. and Thursday, Feb. 16 from 1- 4 p.m. in the Press Room, Trailer 6575, near the Discovery Center. If interested, contact Nadine Horner, 3-9051 or horner7@llnl.gov.

Be a judge: Judging will take place at the Robert Livermore Community Center on Wednesday, March 29 from 7:30 a.m.-1:30 p.m. Judges meet with student participants and review and rank their projects. Judging is done in teams organized by discipline area. If interested, contact Connie Olson 4-4640 or ruvalcabaolson1@llnl.gov.

Meet the students: Come to the Robert Livermore Community Center on Wednesday, March 29 from 1-2 p.m. to meet the student participants and discuss their projects. If interested, mark this date on your calendar and bring a colleague with you. Park in the Robert Livermore parking lot located adjacent to the Community Center on Loyola Way.

Undoing a cosmic blunder

Robert Kirshner, a Harvard College professor of astronomy and Clowes professor of science at Harvard University, presented "A Blunder Undone: Albert Einstein and the Accelerating Universe," last week as part of the year's first installation in the Director's Distinguished Lecturer Series.

In 1917, Albert Einstein amended his original equations for general relativity by introducing a cosmological constant to make a static universe. However, after the discovery, in 1929, that the universe was expanding, this cosmological term looked like a big mistake. In fact, it is often referred to as Einstein's greatest blunder. Moreover, modern astronomical observations made using exploding stars show that not only is the universe expanding, but this expansion is accelerating. This remarkable finding is attributed to the effects of a mysterious "dark energy" that pervades the universe.

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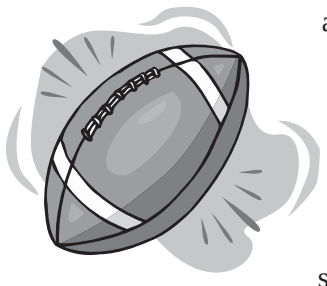
JACQUELINE MCBRIDE/NEWSLINE

RETIREES' corner

(Editor's note: With only two Newsline *issues per month, space is limited for the Retirees' Corner. An abridged version will be published in* Newsline, *and a full version posted on the retirees' Website: www.llnlretirees.org)*

Gus (Mechanical Engineering, 2000) and **Char Carlson** spent their fifth year of retirement enjoying family in the Bay Area and visiting family in Arlington, Wash. Their travel event of the past year was a 1-1/2 week trip to Quito, Ecuador and the Galapagos Islands. The wildlife of the Galapagos, (land and water) is simply amazing. In the high Andes Mountains near Quito, Char was surprised and thrilled by the number and variety of hummingbirds. They also spent an enjoyable September week in Kauai.



Edgar (Chemistry Test, 1993) and **Janet Peck** had several celebrations during the past year: their 50th wedding anniversary, 50th college class reunion and Edgar's 55th high school reunion. They traveled to reunions in Ohio and Texas (when hurricanes Rita and Katrina hit).

Gordon (B Division, 1989) and **Nancy Repp** have been involved with remodeling their church parish hall, their own kitchen and have taken some trips.

Sue (Procurement, 1989) and **Sam** (Electronics Engineering, 1993) **Spataro** had a full year visiting their children, other relative and friends. They also visited the Football Hall of Fame last August and attended the induction of their favorite San Francisco 49er quarterback, Steve Young. Sam and Sue's e-mail address: psyrah@ comcasst.net.

Edward Dante (E Division, 1986) and **Mary Ann Dante** (TID Library, 1993) are enjoying life in the Sierra foothills on their 280-acre ranch near Placerville in Pleasant Valley (e-mail address: N6Bn6@aol.com). Last March, they installed a 32-module photovoltaic solar system and have made more than six megawatt hours of electricity.

The travel group meeting is Tuesday, Feb. 28, at 2 p.m. in the Community Room of the Livermore Police building, 1110 S. Livermore Ave. The topic is "Hiking in Switzerland," by **Barbara and Dick Mallon.**

February's retiree luncheon will be at noon on Wednesday, Feb. 15, at the Elks Lodge in Livermore, 940 Larkspur Drive. (Reservations: www.llnlretirees.org). The speaker will be **Dr. Jim Seward** of LLNL's Health Services Department and his topic is "What Happens if the Bird Flu turns into a Human Pandemic."

Send input to Jane or Gus Olson. E-mail: AugustO@ aol.com or JaneRubert@aol.com. Phone: (925) 443-4349, snail mail address: 493 Joyce St., Livermore, CA 94550.

NEWSLINE

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PEOPLE NEWS

in MEMORIAM

Richard Snavely

Laboratory physicist Richard Snavely died of cancer Dec. 21. He was 50.

Born in Aberdeen, Wash., Snavely grew up in nearby Bellevue and Redmond. After attending the University of Washington for two years, he moved to the Bay Area and entered the foundry business, later founding the Moss Bay Foundry in Oakland.

Snavely resumed his education earning a bachelor's degree in physics from UC Berkeley and subsequently a doctorate from UC Davis. His doctoral dissertation earned him the Allen G. Marr Distinguished Dissertation award in 2004. Announcement of the award came while he was working as a postdoc in the National Ignition Facility's High Energy Density Experimental Science Program. Snavely was credited with advancing the emerging field of high power, ultra short pulse duration laser interaction with matter.

Snavely enjoyed a broad range of interests and activities including sailing, rock climbing, motorcycling, winter hiking, geology, music and the marshal art of Kendo.

He is survived by his wife Benita and stepson Vincent Ushikubo of San Francisco; parents Elizabeth and Richard Snavely of Redmond, Wash.; and brother David Snavely and his wife Carol Snavely of Seattle, Wash.

The University of California, Davis has established a scholarship fund for graduate students in the Department of Applied Science in Snavely's name.

In order for the fund to become a part of UC's perpetual endowment it must be funded at $10,000 within one year. If after a year there is less than this in the Richard Snavely Memorial Scholarship Fund, the money accumulated will be awarded to selected students until the fund is empty and the fund will be terminated.

Donations to the scholarship fund may be made to the "University of California, Davis" with the designation on the memo line of the check noting "Richard Snavely Memorial Scholarship Fund." Send donations to: Richard Snavely Memorial Scholarship Fund, c/o College of Engineering, Dean's Office, Attn: Ms. Janet Krovosa, 1 Shields Ave., Davis, CA 95616.

For more information about the scholarship fund, contact Bruce Remington, 3-2712, or remington2, or Mike Key, 4-2175, or key1.

John Orville Beatty

John Orville Beatty, LLNL medical director from 1980-1982 and long-time Health Services physician from 1959–1991, died Dec. 17 in Visalia. He was 83.

Beatty was born in Reno, Nev. and received his medical degree from the University of Maryland, School of Medicine. He did his internship at the University of Indiana and was a postdoctoral fellow in cardiac pathology at the University of Pennsylvania.

He served as a medical officer during the Korean War and later practiced internal medicine and was the acting coroner for Clark County, Nev. He then served as either staff physician or emergency medicine physician at several hospitals in the Los Angeles area and at Fairmont Hospital in San Leandro.

In 1959 Beatty joined the Laboratory's Health Services Department medical staff and worked at LLNL for 32 years, until his retirement in 1991.

Beatty lived in Pleasanton for 43 years before moving to Visalia in 2002 to be near his daughter and her family.

He was an avid skier and rock climber in his youth. He loved the Sierra Nevada Mountains. He was a voracious reader, often reading three or four books at the same time. He loved classical music, doing genealogical research and taking care of his beloved Labrador retrievers Beau, Dutch and Poe.

He is survived by his wife of 62 years, Barbara, and their four children and nine grandchildren.

A memorial service was held in Reno on Dec. 28.

BROOKS

Continued from page 2

Los Alamos transition and UC retirement:

Brooks said NNSA is striving to understand the changes the University of California is making to UCRP accounts for LANL employees and retirees. "I can tell you that we're very serious about making sure that both current and future retirees are treated fairly," he said. "We're going to keep the faith with the people who have placed expectations in the retirement system."

Q&A

RFP and contract:

The RFP for Los Alamos was designed to strike a balance between the rights of current employees and the flexibility the new contractor needs to manage the laboratory, Brooks said.

Brooks said the contractor's success will depend not on getting rid of people, but on "retaining a highly qualified, motivated workforce. The whole idea is to maintain the high level of science and technology and bring operations and administration up to that level."

Asked why the Livermore competition was not postponed to assess the Los Alamos transition, Brooks reiterated that DOE/NNSA was under legal obligation to conduct the competition. "We don't have a choice."

He said by the time a decision is made on the Livermore contract, Los Alamos National Security will have been in place for 15 months. "That's enough time for us to see how well the new management is doing. Don't underestimate what we can learn in that time."

Brooks' presentation to be rebroadcast on Lab TV

Brooks fielded a number of other questions about the budget and the regulatory environment. The presentation will be rebroadcast on Lab TV channel 2 at 10 a.m., noon, 2, 4 and 8 p.m. today (Friday) and the same times plus 4 a.m. Monday through Wednesday.

JACQUELINE MCBRIDE/NEWSLINE

Ambassador Linton Brooks, administrator of the National Nuclear Security Administration, met with the media during a special visit to the Lab Thursday.

Brooks used the time to unveil a new security asset for the Lab — a field-tested, state-of-the-art defensive weapon with a fire rate of up to 4,000 rounds per minute.

Brooks said the weapon, a high-powered Dillon Aero Gatling gun, eventually will become the standard for security operations throughout the DOE/NNSA complex. Brooks characterized the weapon as another means of deterrence "rather than trying to have a level playing field."

"We've been on a continuing process since September 11 to improve security" across the complex, Brooks explained. "Terrorists have shown they are willing to die for success…Things like this make it clear that if terrorists try to come here, they will come here for failure rather than success."

JACQUELINE MCBRIDE/NEWSLINE

Stardust struck

Cometary and interplanetary dust samples from the NASA Stardust mission were on display for the media Tuesday. Scientists believe Stardust will provide insight into the origins of the solar system. Samples arrived at the Lab late last Friday, and scientists began analyzing the samples on Monday. Hope Ishii, right, displays a sample of aerogel with cometary tracks to members of the media.

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